

BEFORE THE OFFICE OF THE COMMISSIONER OF RAILROADS

STATE OF WISCONSIN

On the Commissioner's own motion for a Determination of the Adequacy of Protective Devices at the Public Crossings of the Wisconsin Central Ltd. tracks with Soo Road and Breitag Road in the Town of Lomira, Dodge County

9164-RX-506

FINDINGS OF FACT AND ORDER

The Commissioner of Railroads, under authority of §195.28 Wisconsin Statutes, directed the staff of the Office of the Commissioner of Railroads (OCR) to investigate the adequacy of warning devices at the public crossings of the Wisconsin Central Ltd. tracks with Soo Road and Breitag Road in the Town of Lomira, Dodge County (Crossing Numbers 692-312S / MP 139.97 and 692-314F / MP 140.98, respectively).

An OCR investigator inspected the crossings in April 2003. No hearing was held.

Findings of Fact

THE COMMISSIONER FINDS:

The Wisconsin Central Ltd. operates 25-30 train movements per day over each crossing at a timetable speed of 60 mph. The trains vary in length up to a maximum of about 130 cars.

Soo Road Crossing Number 692-312S / MP 139.97

Soo Road is 20' wide in the vicinity of the crossing and intersects the railroad tracks at an angle of 75° measured in the southeast quadrant. The roadway approaches the crossing at a grade of 1% ascending on the west and 4-5% descending on the east. Soo Road carried an average daily traffic (ADT) of 127 according to 2002 DOT records at a legal speed limit of 55 mph. The crossing consists of one mainline track.

A motorist traveling at 55 mph requires a safe stopping distance of 527'. The crossing is visible from over 800' to the west and about 480' to the east. The roadway east of the crossing enters a curve to the north and begins to climb a hill at about 350' from the crossing.

Assuming a train speed of 60 mph, a motorist traveling at 55 mph needs to see a train when it is 670 feet from the crossing from a point 527' down the highway. The sight distance available in each quadrant from the safe stopping distance is as follows: 900' in the northwest quadrant, 300' intermittent in the northeast quadrant, 250' in the southwest quadrant and 250' in the southeast quadrant. Available sight distance is inadequate in three of the four quadrants.

The exposure factor at this crossing is about 3800. The exposure factor equals the product of the number of trains per day and the number of highway vehicles per day, which yields a numerical value for the potential conflicts each day at the crossing.

No train-vehicle accidents have occurred at this crossing since 1973.

The Wisconsin Department of Transportation has produced a benefit-cost analysis for all at-grade crossings in the state. Installing new automatic flashing lights with gates and constant warning time circuitry at the Soo Line Road crossing has a net benefit of about \$411,000. The benefit-cost ratio is about 3.53 meaning that the public will receive \$3.53 in safety benefits for each dollar expended.

Any accidents that might occur here will likely be quite serious due to train speeds of 60 mph. Train speed is strongly correlated with fatalities in train/vehicle accidents. More specifically, crossings with train speeds of 40 mph and over have a disproportionate number of fatalities. According to Federal Railroad Administration (FRA) statistics, nationally, in 1994 71% of fatalities occurred at crossings with train speeds of 40 mph+, even though only 26% of all crossings had train speeds of 40 mph+.

The crossing is presently protected with advance warning signs, reflective crossbucks and highway stop signs. The existing warning devices are inadequate. The existing warning devices will be adequate until such time as the new warning devices are installed. In order to adequately protect public safety 12" LED automatic flashing lights with gates and constant warning time circuitry are needed because of the limited visibility in several quadrants, the large number of train movements and train speed. Traffic on this road is also expected to increase as the area south of Lomira continues to develop.

Breitag Road Crossing Number 692-314F / MP 140.98

Breitag Road is 20' wide in the vicinity of the crossing and intersects the railroad tracks at an angle of 85° measured in the northwest quadrant. The roadway approaches to the crossing are essentially level. Breitag Road carried 88 ADT according to 2000 DOT records at a legal speed limit of 55 mph. However, the large amount of development on the south side of Lomira has greatly increased traffic on this highway. On the day of the inspection, approximately 18 vehicles crossed the tracks between 2:30 and 3:30 PM. The crossing consists of one mainline track.

A motorist traveling at 55 mph requires a safe stopping distance of 527'. The crossing is visible from over 700' to the west and approximately 240' to the northeast. The crossing is visible for at least 600' to motorists on the stretch of Breitag Road that parallels the tracks south of the crossing.

Assuming a train speed of 60 mph, a motorist traveling at 55 mph needs to see a train when it is 670' from the crossing from a point 527' down the highway. The sight distance available in each quadrant from the safe stopping distance is as follows: 30' clear and 200' partial in the northwest quadrant, none in the northeast quadrant, 30' clear and 500' partial in the southwest quadrant and 100' southeast quadrant. Available sight distance is inadequate in all four quadrants.

The exposure factor at this crossing is about 2600.

No train-vehicle accidents have occurred at this crossing since 1973.

Installing new automatic flashing lights with gates and constant warning time circuitry at the Breitag Road crossing has a net benefit of about \$334,000. The benefit-cost ratio is about 3.05 meaning that the public will receive \$3.05 in safety benefits for each dollar expended.

Any accident that might occur here will likely be quite serious due to train speeds of 60 mph.

The crossing is presently protected with advance warning signs, reflective crossbucks and highway stop signs. The existing warning devices are inadequate. The existing warning devices will be adequate until such time as the new warning devices are installed. In order to adequately protect public safety 12" LED automatic flashing lights with gates and constant warning time circuitry are needed because of the limited visibility in several quadrants, the large number of train movements and train speed.

Constant warning time circuitry adjusts for train speed and causes the crossing signals to always operate for the same amount of time before the train reaches the crossing, regardless of train speed. A motion detector simply detects the train operation, but does not adjust for train speed so that the amount of warning time varies based on train speed.

Light emitting diodes (LED) are a relatively new application for crossing signals. The LED lamps replace the incandescent bulbs. LEDs have higher conspicuity, a wider cone of vision, and longer life than incandescent lights. LEDs are especially useful on east-west roadways where the rising and setting sun may make the signals difficult to see.

Source of funding: The cost of signal materials and installation shall be paid for from OCR state and federal safety funds.

Conclusion on the Issue

THE COMMISSIONER CONCLUDES:

1. That in order to adequately protect and promote public safety, it is necessary to install and maintain 12" LED automatic flashing lights with gates and constant warning time circuitry at the crossing of the tracks of the Wisconsin Central Ltd. with Soo Road and Breitag Road in the Town of Lomira, Dodge County.

2. That in order to adequately protect and promote public safety at the crossings of the tracks of the Wisconsin Central Ltd. with Soo Road and Breitag Road in the Town of Lomira, Dodge County, it is necessary to maintain the present stop signs at the crossing until the automatic flashing lights are installed.

3. That in order to adequately protect and promote public safety at the crossing of the tracks of the Wisconsin Central Ltd. with Soo Road and Breitag Road in the Town of Lomira, Dodge County, it is necessary to establish and maintain adequate vision triangles at the crossings.

Conclusion of Law

THE COMMISSIONER CONCLUDES:

That the jurisdiction of the Office of the Commissioner of Railroads under §195.28 Wisconsin Statutes extends to this matter. Accordingly, the Office enters an order consistent with the findings of fact.

Order

THE COMMISSIONER ORDERS:

1. That the **Wisconsin Central Ltd.** shall install and maintain automatic 12" LED flashing lights signals, gates, and constant warning time circuitry with appropriate appurtenances in accordance with such plans as are filed with and approved by the Office of the Commissioner of Railroads at the crossing of its tracks with **Soo Road** at-grade in the Town of Lomira, Dodge County by **December 31, 2007** (Crossing Numbers 692-312S / MP 139.97).

2. That the **Wisconsin Central Ltd.** shall install and maintain automatic 12" LED flashing lights signals, gates, and constant warning time circuitry with appropriate appurtenances in accordance with such plans as are filed with and approved by the Office of the Commissioner of Railroads at the crossing of its tracks with **Breitag Road** at-grade in the Town of Lomira, Dodge County by **December 31, 2007** (Crossing Number 692-314F / MP 140.98).

3. That the Wisconsin Central Ltd. shall submit to the Office of the Commissioner of Railroads signal and circuit plans with the cost estimate of its proposed installation and upon completion of the signal project, a detailed statement of the actual cost to the Office and to the Wisconsin Department of Transportation.

4. That the signal installation work herein ordered shall not begin until the district office of the Wisconsin Department of Transportation informs the railroad that they may start such work and such start notice will not be issued until appropriate federal aid or other funding arrangements have been assured. The cost of the new project initiated before the start notice will not be reimbursed with public funds and shall be the responsibility of the railroad.

5. That the Wisconsin Central Ltd. shall bear no part of the cost of the crossing signals installation, except for any cost assessed to the railroad pursuant to §195.60, Wisconsin Statutes, for the investigation of this matter by the Office. The railroad shall not pass on those assessment costs either directly or indirectly.

6. That if the petitioner, railroad or any interested party objects to this order and requests a hearing within 20 days of the date of this order in writing, the Office will hold a public hearing.

7. That jurisdiction is retained.

Dated at Madison, Wisconsin, (August 10 2005).

By the Office of the Commissioner of Railroads.

Rodney W. Kreunen
Commissioner of Railroads

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